

ABSTRACT

The present invention provides introduction of NF- κ B decoy oligodeoxynucleotide into rat cranial nerve through a carotid artery during global brain ischemia. Polymerase chain reaction demonstrated that one hour after global brain ischemia, transfected NF- κ B decoy oligodeoxynucleotide effectively suppressed expression of tumor necrosis factor α , interleukin 1β and intracellular adhesion molecule 1 messenger RNAs. Terminal deoxynucleotidyl transferase-mediated deoxyuridine nick-end labeling staining and immunohistochemistry using microtubule-associated protein 2 demonstrated that transfected NF- κ B decoy oligodeoxynucleotide significantly attenuated neuronal damage seven days after global brain ischemia. Therapeutic transfection of NF- κ B decoy oligodeoxynucleotide during brain ischemia may be effective for attenuation of neuronal damage, suggesting a strategy for protecting the cerebrum from global ischemia.